BEFORE

THE PUBLIC SERVICE COMMISSION

OF

SOUTH CAROLINA

DOCKET NO. 2001-420-E

In Re: Application of South Carolina Electric & Gas Company for a Certificate of Environmental Compatibility and Public Convenience and Necessity for the Construction and Operation of an 875 MW Combined Cycle Generating Plant near Hardeeville, South Carolina	APPLICATION FOR CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC CONVENIENCE AND NECESSITY

South Carolina Electric & Gas Company ("SCE&G" or "Company") hereby applies to the South Carolina Public Service Commission ("Commission") for a Certificate of Environmental Compatibility and Public Convenience and Necessity to construct and operate an 875 MW combined-cycle electrical generating plant on a site located in Jasper County near Hardeeville, South Carolina. This application is filed pursuant to the provisions of S.C. Code Ann. § 58-33-10 et seq. (1976 & Cum. Supp. 2000).

In support of this application, SCE&G would respectfully show to the Commission:

1. Applicant. SCE&G is a corporation duly organized and existing under the laws of the State of South Carolina, with its principal offices at 1426 Main Street, Columbia, South Carolina, 29201. The Company is engaged in the business of

generating, transmitting, delivering, and providing electricity to public and private energy users for compensation.

2. Service Area. SCE&G provides electric service to more than 622,366 customers in a 15,000 square-mile area in the central, southern, and southwestern portions of South Carolina. This area extends into 24 of the state's 46 counties. Columbia, Charleston, Aiken, Beaufort, and Orangeburg are major cities within the area.

3. Project Description. A description of the utility facility and the location at which it is to be built, power plant design features and facilities, and information pertaining to the project site are all contained in the testimony and exhibits prefiled herein. Specifically, please see the Direct Testimony of Neville O. Lorick and Stephen M. Cunningham, with exhibits.

4. Statement of Need. Currently, the Company has a net generating capacity from units on its system of 4,563 megawatts, consisting of 644 megawatts at V.C. Summer Nuclear Plant, 2,745 megawatts at 8 coal and steam generating plants, 804 megawatts at 6 hydro plants, and 370 megawatts of peaking combustion turbine capacity at various locations throughout its system. Including power available under long-term purchase agreements with other utilities and non-utility generators, the Company has a total generating capability of 4,588 megawatts available.

The Company's peak demands are forecasted to increase by 857 megawatts during the next ten years. The Company's needs forecast and considerations affecting this forecast are set forth more fully in the testimony and exhibits prefiled herein. Without additional capacity of the proposed plant, SCE&G will not be able to meet the

increasing need for power and assure system reliability. For more detailed analysis, please see the Direct Testimony of Joseph M. Lynch, with exhibits.

In order to provide the necessary generating capacity and to assure reliable electric service to its customers, the Company proposes to construct a combined-cycle generating plant in Jasper County, which will be composed of three General Electric 7FA combustion turbine-generators, three heat recovery steam generators (HRSGs), and one steam turbine-generator. The combustion turbines will be equipped with inlet chilling to maximize the output of the plant during hot weather, and the plant will have the capability to generate additional "peaking" output of up to 120 megawatts using supplementary firing. The peak output from the plant will be approximately 900 megawatts during the winter and 875 megawatts during the summer. See the prefiled Direct Testimony of Stephen M. Cunningham for greater detail.

5. Environmental Studies. An environmental study prepared by ENSR International is attached hereto as Exhibit A. Additional environmental information is contained in the Direct Testimony of John W. Preston, Jr., prefiled herewith.

6. Proof of Service. Exhibit B, attached hereto and made a part hereof, is proof of service of a copy of this application on the Chief Executive Officer of each municipality and the head of each state and local government agency charged with the duty of protecting the environment or of planning land use in the area in the county in which any portion of the facility is to be located pursuant to S.C. Code Ann. §58-33-120(2).

7. Public Notice. Attached as Exhibit C, and made a part hereof, is the form of public notice to be given to persons residing in the municipalities entitled to receive

notice pursuant to S.C. Code Ann. § 58-33-120(3) by publication of a summary of the application, the date on or about which it is to be filed, and the newspapers of general circulation in which such notice will be published. This notice will serve substantially to inform such persons of the filing of this application and proof of notice will be filed with the Commission when received from the various newspapers identified.

8. Correspondence or Communications. The name, title, address and telephone number of the persons to whom correspondence or communications relating to the application should be addressed are as follows:

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Attorneys for the Applicant

South Carolina Electric & Gas Company respectfully requests that the Commission issue a Certificate of Environmental Compatibility and Public Convenience and Necessity for the project described herein.

SOUTH CAROLINA ELECTRIC
& GAS COMPANY

BY: Francis P. Mood
Francis P. Mood, Its Attorney

Date: October 2, 2001

Exhibit A

South Carolina Electric & Gas
Columbia, South Carolina

ENSR® INTERNATIONAL

Environmental Analysis for the Jasper County Generating Facility

ENSR Corporation
September 2001
Document Number 06147-018-310

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1.0 PROJECT DESCRIPTION

South Carolina Electric & Gas Company (SCE&G) proposes to construct and operate a power generating facility, herein referred to as the "Jasper County Generating Facility," on a site located approximately five miles north of Hardeeville, in Jasper County, South Carolina. The proposed facility will be a combined cycle electrical generating plant with a nominal generating capacity of 875 megawatts (MW). The plant will be fueled primarily by pipeline-quality natural gas, with distillate fuel oil as a backup source.

This environmental assessment provides, in part, information required for SCE&G's Siting Application before the South Carolina Public Service Commission. The assessment is based on environmental study data provided by SCE&G and available published information. A list of the environmental studies conducted for the project is provided in section 1.2.

1.1 Site Location and Description

The proposed SCE&G Jasper County Generating Facility site is located approximately five miles north of Hardeeville in Jasper County, South Carolina. The site is bounded to the west by Savannah River swampland, to the east by State Secondary Road (SSR) 34 and to the north and south by timberland. Elevations of the site range from 10 to 31 feet above mean sea level (Milliken, 2001). The northern portion of the property contains an existing residence and associated outbuildings. There is also an existing powerline traversing the property in an east-west direction, south of the residence.

The area surrounding the proposed Jasper County Generating Facility site is primarily rural. The community of Baker Hill lies to the north with widely scattered residences and businesses located north and east of the site. The location of the proposed site is shown on portions of the Hardeeville and Rincon U.S. Geological Survey (USGS) 7.5-minute topographic maps in Figure 1 (located at the end of this document).

1.1.1 Site Access

Primary access to the Jasper County Generating Facility will be from SSR 34 (Old Purysburg Road). SSR 34 crosses Interstate Highway 95 (I-95) approximately 8 miles south of the proposed site. To the east of the site, U.S. Highway 321 runs parallel to SSR 34 and is readily accessible from the proposed facility location. The site is not directly accessible by rail, therefore, it is anticipated that major equipment deliveries will be trucked to the site via these existing roads. SCE&G does not anticipate the need for highway or bridge upgrades in order to ship the facility's major equipment.

1.1.2 Initial and Ultimate Development

The Jasper County Generating Facility will operate as a combined-cycle, base load power plant. The proposed facility is designed to have a nominal generating capacity in the range of 875 MW. Commercial operation is scheduled to commence in May 2004.

1.2 Summary of Environmental Studies

The following specific environmental studies were conducted to assess how the proposed SCE&G Jasper County Generating Facility will affect the local environment.

1. Cultural Resource Survey, Brockington and Associates, Inc., 2001.
2. Phase I Environmental Site Assessment, Milliken Forestry Company, Inc., 2001
3. Endangered Species Assessment, Milliken Forestry Company, Inc., 2001
4. Wetland Delineation, Milliken Forestry Company, 2001
5. Permit to Construct and Operate Air Emissions Equipment, ENSR International, 2001

2.0 AFFECTED ENVIRONMENT

2.1 Land Use

The project site is located within a rural area, and contains planted pine trees, mixed pines and hardwoods, pastureland, and swampland. Savannah River swampland is present in the western portion of the project tract, and South Carolina Route 34 (Purysburg Road) forms the eastern tract boundary. A drainage way separates the northern and southern portions of the site. Numerous dirt roads and firebreaks extend throughout the tract and an existing power line crosses the northern portion of the property. Elevations on the property range from ten (10) to thirty-one (31) feet above mean sea level.

Currently the tract contains a residential home and associated outbuildings in the northern portion of the property. These buildings were constructed in 1993. In addition to the residence, the tract has been used for horse boarding, hunting, timber management and farming. Primary focus of the farming operations appears to be grain production for wildlife use (Milliken Forestry Company, 2001).

2.2 Water Resources

The watershed that Jasper County is located within consists primarily of the Savannah River and its tributaries between Gall Branch and Cypress Branch. It occupies 99,732 acres of the Lower Coastal Plain region of South Carolina. This watershed contains a total of 84.3 stream miles. Long Branch enters the river at the top of the watershed. The Boggy Swamp drainage, which incorporates Mill Bay Creek, enters the river further downstream. As a reach of the Savannah River, this watershed accepts all upstream drainage.

The water supply that the proposed facility will utilize is located near the project site, owned by the Beaufort-Jasper Water Authority (BJWA). SCE&G will be purchasing water from this water authority for facility use. The peak flow rate will be approximately 8,150 gallons per minute. This total includes water for cooling and general facility use. Water used for cooling, will either be recycled, evaporated or discharged to an existing BJWA Publicly Owned Treatment Works (POTW) facility.

2.2.1 Existing Surface Water Quality

The project site drains into the Savannah River, which is located just west of the site. Aquatic life and recreational uses are fully supported in the river within this reach. However, the South Carolina Department of Health and Environmental Control (SCDHEC) has issued a fish consumption advisory for mercury, Cesium-137 and Strontium-90. This advisory includes portions of the project watershed. Conversely, SCE&G will be obtaining its water from the BJWA and not directly from an existing surface water.

2.2.2 Existing Groundwater Yields and Quantity

The project area is underlain by a surficial aquifer system which consists of unconsolidated sand and gravel aquifers (USGS, 1990). The thickness of the surficial aquifer system is typically less than 50 feet. Based on 1985 USGS data, between 5-10 million gallons of freshwater per day was withdrawn from the surficial aquifer in Jasper County. However, fresh ground-water withdrawals for most water use categories are increasing, according to a 1990 nationwide compilation of water-use data by the U.S. Geological Survey. BJWA plans to drill temporary water wells for use during construction. Use of well water during construction will not permanently affect ground water resources in the immediate vicinity of the site. However, water for operation of the Jasper County Facility will be obtained from BJWA. Therefore, groundwater resources will not be affected by operation of the proposed facility.

2.3 Terrestrial and Aquatic Resources

The proposed Jasper County Generating Facility site lies within the lower Coastal Plain Physiographic Province in the west-central portion of Jasper County. Biotic communities within the area range from freshwater cypress-tupelo swamp to longleaf pine on higher ridges. Elevations range from 10 to 31 feet above mean sea level (Milliken, 2001).

2.3.1 Upland Resources

Four upland community types are present within proposed project area. These include pine plantation, pine upland, upland island and agricultural (Milliken, 2001). All upland communities within the site have been previously managed for agricultural or timber production in the past, and therefore the natural vegetative characteristics have been modified. These types are described below.

- *Pine Plantation.* This type is characterized by planted loblolly pine (*Pinus taeda*). Other non-planted vegetation includes waxmyrtle (Myrica cerfera), greenbrier (*Smilax sp.*) and gallberry (*Ilex coriacea*). Very little herbaceous vegetation is present but primarily consists of Virginia chain fern (*Woodwardia virginica*) and broomsedge (*Andropogon gerardii*). This type occupies approximately 15 percent of the project area.

- *Pine Upland.* This type occurs on ridges and upland flats. Dominant vegetation consists of loblolly pine and longleaf pine (*P. palustris*) occasionally mixed with southern red oak (*Quercus falcata*), white oak (*Q. alba*), water oak (*Q. nigra*), black gum (*Nyssa sylvatica*) and mockernut hickory (*Carya tomentosa*). Common mid and understory species include flowering dogwood (*Cornus florida*), American holly (*Ilex opaca*), persimmon (Diospyros virginiana), sassafrass (*Sassafras albidum*), pepperbush (*Clethra alnifolia*), various *Vaccinium* species and various ferns. Approximately 30 percent of the property is covered by this type (Milliken, 2001).

- *Upland Islands.* This type occurs within higher portions of Savannah River swamplands. Dominant species include loblolly pine, sweetgum (*Liquidambar styraciflua*), laurel oak (*Q. laurifolia*) and river

birch (*Betula nigra*). Midstory and understory species consist primarily of species found in the Pine Upland type. This type covers approximately 10 percent of the project site.

- *Agricultural Fields.* Planted grain crops and wildlife food plots planted in *Lespedeza bicolor* characterize this type. This type occupies approximately 10 percent of the site.

2.3.2 Wetland Resources

Wetlands are considered waters of the United States and fall under jurisdiction of the U.S. Army Corps of Engineers (USACE). Dredge and fill activities in waters of the United States are permitted by the USACE pursuant to Section 404 of the Clean Water Act (CWA). In order to avoid wetland impacts by construction of the new facility, a wetland delineation has been conducted.

Milliken Forestry Company delineated wetlands within the proposed Jasper County Generating Facility site. Wetland delineation followed the 1987 USACE Wetland Delineation Manual. Based on this delineation two wetland systems were identified. Both wetland systems are forested, palustrine systems (Milliken, 2001). These types include Bald Cypress – Tupelo Swamp and Small Stream Forest. Both systems are described below.

- Bald Cypress – Tupelo Swamp: This type occurs on floodplains adjacent to the Savannah River. Dominant vegetation includes bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatica),* swamp tupelo (*N. biflora*) and green ash (*Fraxinus pennsylvanica*). The understory is sparse but includes buttonbush (*Cephalanthus occidentalis*) and lizard's tail (*Saururus cernuus*). This type occurs over approximately 30 percent of the tract.

- Small Stream Forest: This type occurs along tributaries of the Savannah River. Less than five percent of the project site contains this wetland type. Dominant species include willow oak (*Q. phellos*) and red maple (*Acer rubrum*). Bald cypress and swamp tupelo are also present. Understory species include possum haw viburnum (*Virburnum nudum*), fetterbush (*Lyonia lucida*), lizard's tail and various ferns.

2.3.3 Fisheries

The closest surface water to the site is the Savannah River. Warmwater species such as largemouth bass (*Micropterus salmoida*), various sunfish and catfish are typically found in this reach. No surface waters occur within the proposed project site. Therefore no additional discussion on fisheries is presented.

2.3.4 Threatened and Endangered Species

Milliken Forestry Company conducted an Endangered Species Assessment for the proposed project site in June 2001. Information regarding rare and endangered species known to occur in Jasper

County was obtained from the South Carolina Heritage Trust and from the U.S. Fish and Wildlife Service (USFWS). Habitat descriptions of listed species were developed and walkover surveys of the project area were conducted to determine the presence of suitable habitat. In addition, a line-of-site red-cockaded woodpecker (*Picoides borealis*) inventory was conducted on those portions of the tract containing potential habitat (Milliken 2001).

According to information obtained from the SC Heritage Trust and USFWS, no known state or federally listed species occur on the property or within one-half mile of the tract. The red-cockaded woodpecker (RCW) and flatwoods salamander (Ambystonma cingulatum) are known to occur in the general vicinity of the project site. The RCW is both federally and state listed as endangered. The flatwoods salamander is state listed as endangered and federally listed as threatened.

Based on the field surveys, no state or federally listed threatened or endangered species were observed within the project area. Suitable habitat for the flatwoods salamander was not noted within the proposed project site. However, marginally suitable nesting habitat and foraging habitat for RCW does occur within the project area (Milliken, 2001).

2.4 Cultural Resources

Brockington and Associates, Inc conducted an intensive cultural resource survey of an approximately 99-acre portion of the project site. The remaining portion of the tract, within the Savannah River swamplands, was not included in the cultural resource survey since this portion of the tract will not be developed. Based on the results of the survey, one previously unrecorded site and one isolated find were identified. The newly recorded site contained artifacts associated with Middle/Late Woodland and Mississippian occupations and included eighteenth/nineteenth century ceramics (Brockington and Associates, 2001). However, the site is not recommended as being eligible for the National Register of Historic Places (NRHP).

The isolated find was the remains of the Wethersbee School, a two room building built prior to 1937. The school and two associated outhouses were demolished and their material moved prior to 1993. According to the cultural resource report, this isolate cannot provide additional information and was recommended not eligible for the NRHP (Brockington and Associates, 2001). Additionally, one previously recorded site was located within the survey area. However, archaeologists did not relocate this site during the investigation. The site may have been misplotted or was destroyed by construction and maintenance of the existing transmission line (Brockington and Associates, 2001). Based on these results, the archaeologists conclude that no further action is required with regard to cultural resources.

2.5 Geology, Soils, and Seismology

2.5.1 Geology

The proposed site is located in South Carolina within the lower Coastal Plain. The geology of this area records many advances and retreats of the sea during which sediment was deposited and planed off repeatedly. For millions of years, the area appears to have been part of a nearly level plain. The sea inundated much of this plain many times during the Miocene Epoch, a period of about 18,000,000 years. During the Pliocene Epoch, a period of approximately 13,000,000 years, part of the plain was above water, and much of the once continuous cover of Miocene deposits were eroded. Widespread movements of the earth that ended the Pliocene Epoch resulted in drowning the coastal region as far inland as the present day Coastal Plain. At the time, the sea was approximately 270 feet higher than its present level. Since that time, the sea has fluctuated many feet several times. The thawing and forming of ice during the Pleistocene, or Ice Age caused the fluctuation, which lasted less than 1,000,000 years. Seven abandoned shorelines have been detected, and the area between each shoreline is treated as a separate terrace with each given a distinctive name. The terraces nearest to the sea are of a younger age, are less developed, and possess a higher percentage of weatherable minerals.

2.5.2 Soils

The project area is characterized by deep, moderately well drained, somewhat poorly drained, and poorly drained soils with sandy loam surface textures and clayey subsoil. Three soil series are delineated on the soil map of the proposed site. They are the Eulonia association, the Argent-Okeetee association, and the Santee association (USDA 1980). The soils tend to have moderate natural fertility and a moderate organic content. The Eulonia association is low in organic content, more conducive to urban uses, and is conveniently mapped in the eastern part of the site, adjacent to Purysburg Road. Most of the proposed energy facility is located within the Eulonia and Argent-Okeetee associations. The Argent-Okeetee association is mostly confined to the southeast portion of the proposed site, and the Santee association makes up the western portion. All three soil series are found on level to nearly level (0-2% slopes) lands of the lower coastal plain and formed from sediment deposition over many geologic periods. Because of this, they possess no depth to bedrock problems and only a slight erosion hazard. The erosion hazard is the probability that erosion damage may occur as a result of site preparation and other ground disturbing activities. The depth to groundwater for the Eulonia association is 1.5-3.5 feet from December through March, 0-1 foot for the Argent-Okeetee association, and +1-1 for the Santee association. Therefore, there is a potential for flooding on the Argent-Okeetee and Santee associations. The Santee and Argent series are also nationally and state listed hydric soils. Generally, these two soils are best suited for pasture, row crops (if drained), and loblolly pine.

2.5.3 Seismology

Historical seismicity in the Coastal Plain of South Carolina has occurred primarily in the Charleston area. One of the great earthquakes in U.S. history happened in Charleston on August 31, 1886. The epicentral intensity of this event was MMI_o X (Modified Mercalli scale). An intensity of MMI_o X implies that rails were bent, some well-built wooden structures were destroyed, and most masonry structures were destroyed. Damage was also observed in cities within a 160-kilometer radius, including Columbia and Savannah, GA. The network monitoring of the Coastal Plain region has shown that seismicity occurs at shallow depths in the upper crust, from the near surface to about 15 kilometers. This region is characterized by shallow earthquakes as opposed to deeper, stronger shocks experienced in other regions. However in recent years, the Coastal Plain area has been much less active.

2.6 Climate

The climate of Jasper County is subtropical in nature, characterized by long hot summers followed by short mild winters. Jasper County lies in southern South Carolina and has the mildest climate in the state. Annual average maximum temperature is 76.5 degrees Fahrenheit (°F); annual average minimum is 56.0 °F; the annual mean temperature is 66.3 °F. Precipitation is usually abundant and equally distributed throughout the year. The abundant supply of moist, warm, unstable air produces frequent scattered showers and thunderstorms. Average annual rainfall is approximately 49.22 inches per year. The tropical storm season runs from June through October. Hurricanes are rare for the area, but tropical storms with winds up to 50 miles per hour occur on average of every two to three years. Tornado season runs from March through October, but April and May are the most tornado-prone months. Many reported tornadoes are waterspouts that do not come ashore.

2.7 Aesthetic Resources

The site for the proposed Jasper County Generating Facility is located in the Lower Coastal Plain Region of South Carolina. The visual character of local landscape is fairly typical of the Lower Coastal Plain Region. Topography in this region is generally flat, limiting long distance views. Much of the area is forested while other areas have been cleared for agricultural purposes. Logging operations are common and can alter the visual character of the area in the short term.

No parks or designated recreational areas are located within close proximity of the site. The most sensitive amenities near the project site are scattered residences. The closest is the residence on the subject property, although a high-voltage electric transmission line already exists, interrupting the view between the residence and the proposed facility site.

2.8 Ambient Noise Quality

The area surrounding the proposed Jasper County Generating Facility site is predominantly rural. Primary ambient noise sources consist of distant and local traffic, birds and insects (particularly at night). Additional noise sources in the area are attributable to agricultural and silvicultural operations, but typically are seasonal and/or temporary in duration.

2.9 Ambient Air Quality

2.9.1 National Ambient Air Quality Standards

The 1970 Amendments to the Clean Air Act (CAA) gave the U.S. Environmental Protection Agency (USEPA) specific authority to establish the minimum level of air quality which all states would be required to achieve. These minimum values or standards were developed to protect the public health (primary) and welfare (secondary). The federally promulgated standards, adopted by South Carolina as state standards, which the proposed facility must comply with, are presented in Table 2-A.

Table 2-A: Ambient Air Quality Standards

Pollutant	Averaging Period[2]	National AAQS[1]		SC Regulation 62.5
		Primary	Secondary	
Sulfur Dioxide	Annual	80	--[3]	80
	24-hour	365	--[3]	365
	3-hour	--[3]	1300	1300
Particulate Matter (TSP)	Annual	--[3]	--[3]	75
PM-10	Annual	50	50	50
	24-hour	150	150	150
Carbon Monoxide	8-hour	10,000	--[3]	10,000
	1-hour	40,000	--[3]	40,000
Ozone	1-hour	235	235	235
Nitrogen Dioxide	Annual	100	100	100
Lead	3-month	1.5	--[3]	1.5

(1) All standards in this table are expressed in ug/m^3.

(2) Short term ambient standards may be exceeded once per year; annual standards may never be exceeded. Ozone standard is attained when the expected number of days of an exceedance is equal to or less than one.

The 1990 CAA Amendments called for a review of the ambient air quality of all regions of the United States. By March 15, 1991, states were required to file with USEPA designations of all areas as either attainment, non-attainment or unclassifiable based on compliance with the air quality standards listed in Table 2-A. Areas of the country which had monitored air quality levels equal to or better than these standards (i.e., ambient concentrations less than a standard) as of March 15, 1991, became designated as "attainment areas," while those areas where monitoring data indicated air quality concentrations greater than the standards became known as "non-attainment areas". Currently Jasper County is classified as being in attainment or unclassified of all air quality standards.

2.9.2 Prevention of Significant Deterioration

Major new sources or major modifications to existing major sources located in attainment areas are required to obtain a Prevention of Significant Deterioration (PSD) permit prior to initiation of construction. A major stationary source is defined as either one of the sources identified in 40 CFR 52.21 and which has a potential to emit 100 tons or more per year of any regulated pollutant, or any other stationary source which has the potential to emit 250 tons or more per year of a regulated pollutant. Since the proposed Jasper County Generating Facility will exceed the PSD threshold and be classified as a major stationary source of air pollutants, the facility will be subject to comply with PSD increments.

PSD regulations specify that new major sources or modifications to existing major sources may only change baseline air quality by a defined amount. This limited incremental degradation is known as a PSD increment. Table 2-B presents the PSD increments that have been established for PM_{10}, SO_2, CO and NO_x .

2.9.3 Ambient Air Quality Data

In accordance with requirements of 40 CFR 52.21(m) any application for a PSD permit must contain an analysis of existing ambient air quality data in the area to be affected by the proposed project. Ambient air monitoring for a period of up to one year may be required to properly satisfy this monitoring requirement. This condition may be waived if a project would cause an impact less than EPA-Specified de minimis monitoring levels. The air dispersion analysis of the proposed project indicates all off-site impacts will be less than PSD significance thresholds. In March 2000, SCE&G requested and was granted a waiver by SC DHEC for a pre-construction/application ambient monitoring program. The requested waiver was granted for the following pollutants: SO_2, TSP, PM_{10}, NO_X, CO and Lead. Based on the South Carolina ambient air quality data for ozone, which is "representative of the area of concern," SCE&G also requested a waiver from the requirement for an ozone pre-construction ambient monitoring program.

Table 2-B: Allowable PSD Increments and Significant Impact Levels (µg/m^3)

Pollutant	Averaging Time	PSD Increments		Class II Area Significant Impact Levels
		Class I	Class II	
Particulate Matter (PM_{10})	Annual Arithmetic Mean	4	17	1
	24-hour Maximum	8	30	5
Sulfur Dioxide	Annual Arithmetic Mean	2	20	1
	24-hour Maximum	5	91	5
	3-hour Maximum	25	512	25
Carbon Monoxide	8-hour Maximum	NA	NA	500
	1-hour Maximum	NA	NA	2,000
Nitrogen Dioxide	Annual Arithmetic Mean	2.5	25	1

Note: Particulate Matter (PM_{10}) = particulate matter with aerodynamic diameter ≤10 µ
µg/m^3 = micrograms per cubic meter
NA = Not applicable, i.e., no standard exists.
Source: 40 CFR 50; 40 CFR 52.21, 40 CFR 51.165

2.9.4 Meteorological Data for Air Dispersion Modeling

EPA Guideline on Air Quality Models suggests five years of representative meteorological data for regulatory refined modeling. Per discussions with SC DHEC and review of the SC *Air Quality Modeling Guidelines*, the appropriate surface and upper air meteorological data for ISCST3 refined modeling applications in Jasper County are from the Savannah, Georgia NWS and Charleston, South Carolina NWS, respectively. The recommended five-year data set for this county is 1984-1988.

2.10 Population and Demographics

The proposed Jasper County Generating Facility is located in Jasper County, South Carolina. The project area can be characterized as rural, but transitioning to industrial and residential land uses. The proposed site is located in southeastern South Carolina, off of SC Route 34 (Purysburg Road), west of Highway 17.

2.10.1 Population

Jasper County is expected to experience a 46 percent increase over its 1990 population (SCDHEC, 1999). Based on U.S. Census Bureau data, the 1990 population of Jasper County was 15,487. Data from the 2000 Census shows Jasper County having 20,678 persons. The population of the county is expected to increase to 22,600 by 2010 (SCDHEC, 1999). U.S. Census Bureau data for 2000 indicates that there are 7,928 housing units in Jasper County averaging 2.75 persons per household. Of that number, the ownership rate is approximately 78 percent. Median household income for Jasper County is $25,154, which is below the statewide median ($33,325).

2.10.2 Facility Workforce

The construction workforce for the proposed facility is expected to be approximately 800 people at the peak of construction. Once in operation the facility is expected to employ roughly 25 full-time personnel. A temporary workforce may be needed periodically during certain facility maintenance operations.

2.10.3 Traffic and Transportation

The proposed Jasper County Generating Facility is located approximately 8 miles north of Interstate 95. To the east of the site, U.S. Highway 321 runs parallel to SSR 34 and is readily accessible from the proposed facility location. Primary access to the facility will be from SSR 34. The nearest major airport is in Savannah.

During construction, it is estimated that a maximum of 300 vehicles per day will access the site. An estimated 35 construction material trucks (e.g. flatbeds, dump trucks, etc.) per day are estimated during construction. Typical traffic during operation of the proposed facility is expected to consist of roughly 25 vehicles per day.

3.0 ENVIRONMENTAL CONSEQUENCES

3.1 Land Use

Approximately 45 acres of the project site will be developed into the power generating facility. The majority of this area is upland forest and agricultural land. The area to be developed is located south of the existing transmission lines, away from the existing residence. Within the area proposed for development, there is an approximately 1.8 acre wetland that will remain undeveloped. Around the wetland area, SCE&G will maintain a 75-foot permanent buffer. An additional 27 acres will be utilized during construction for parking and equipment laydown areas. This area is located within previously disturbed land. Development of the Jasper County Generating Facility will cause the permanent conversion of approximately 45 acres of upland forest and agricultural land to industrial use. However, this is not considered a significant impact since similar land use is abundant near the project area.

3.2 Water Resources

There are no perennial surface waters, other than wetlands, located within the project boundary. The closest surface water is the Savannah River located approximately one mile to the southwest. The proposed facility will not be located within a recorded 100-year flood boundary (Zone A, based on FEMA, firm community panel 450112 0125B, dated 9-29-86).

3.2.1 Water Quality During Construction

Construction of the proposed facility may increase the potential for erosion and sediment-laden runoff into the Savannah River system. However, none of the Savannah River swampland found on the project site will be developed. In fact, SCE&G will maintain a minimum 75-foot buffer around the swamplands, therefore it is doubtful that runoff from construction of the facility will reach the river. Additionally, in planning the project, SCE&G has incorporated measures to avoid, minimize or mitigate for potential effects to water resources. SCE&G will implement appropriate construction and environmental protection measures coupled with best management practices to further minimize impacts to water resources.

3.2.2 Water Quality During Operation

During operation of the facility, approximately 8,150 gallons of water per minute will be utilized at peak flow rate. Water will be obtained from BJWA for cooling as well as general facility use. Water used for cooling, will either be recycled, evaporated or discharged to an existing BJWA POTW facility. Cooling water sent to the POTW will be treated and discharged to a receiving stream in accordance with the POTW's National Pollutant Discharge Elimination System (NPDES) permit. The Jasper County Generating Facility will not discharge water directly into a receiving stream.

3.3 Terrestrial and Aquatic Resources

3.3.1 Upland Resources

As described earlier, the upland community types present within project area include pine plantation, pine upland, upland island and agricultural. Vegetative characteristics of these areas have been modified from previous timber and agricultural management. Approximately 45 acres of upland forest and agricultural land will be lost to the construction of the proposed facility. However, due to the abundance of similar habitat and land use types in close proximity to the project site, this loss is not considered significant.

3.3.2 Wetland Resources

Based on the wetland delineation, the project site contains approximately 83 acres of forested wetland. The majority of the wetlands are part of the Savannah River swampland. However, SCE&G has designed the facility so that no wetlands will be directly impacted. In fact, SCE&G will maintain a 75-foot buffer around wetland areas. This buffer coupled with appropriate environmental protection measures and best management practices during construction will minimize or even avoid indirect impacts to wetlands from potential runoff.

3.3.3 Wildlife

During construction, mobile wildlife species such as birds and large mammals will be dispersed into adjacent areas. However, less mobile species may incur direct loss due to initial land clearing and grading. Development of the proposed generating facility will cause the direct loss of approximately 45 acres of habitat suitable of supporting wildlife typical of the area. However, due to the abundance of similar habitat and the vast expanse of forested wetlands west of the site, this loss is not considered consequential.

3.3.4 Fisheries

As stated in Section 2.3.3, the closest surface water to the site is the Savannah River. In this reach, the Savannah River is considered a warmwater fishery. Construction and subsequent operation of the Jasper County Generating Facility will not directly affect the Savannah River. Therefore, no fisheries will be directly impacted by the proposed project.

3.3.5 Rare, Threatened, and Endangered Species

Based on field surveys, no state or federally listed threatened or endangered species were observed within the project area. Therefore, no direct impacts to listed species are expected. However, potentially suitable habitat was identified for RCW (Milliken, 2001). A portion of this habitat will be

directly impacted from the construction of the facility. However, due to the abundance of potentially suitable RCW habitat near the project area, this loss is not expected to significantly impact RCW.

3.4 Cultural Resources

An intensive cultural resource survey revealed that one previously unrecorded site and one isolated find occurs within the project area. The newly recorded site contained artifacts associated with Middle/Late Woodland and Mississippian occupations and included eighteenth/nineteenth century ceramics. The isolated find was the remains of the Wethersbee School, a two room building built prior to 1937. However, neither site is recommended as being eligible for the NRHP. Therefore, construction and subsequent operation of the proposed facility is not expected to adversely impact cultural resources or historic structures eligible for listing on the NRHP.

3.5 Geology, Soils and Seismology

3.5.1 Geology

The geology of the area is typical for the region and is not expected to pose any unique construction problems. Therefore, foundation design is expected to be typical for facilities of this nature. However, site specific engineering data, such as soil borings, will be utilized to design the facility to be consistent with the underlying geologic features of the site.

3.5.2 Soils

The Eulonia association is most conducive to urban uses and is conveniently mapped adjacent to Purysburg Road. All delineated soil series are rated slight in the erosion hazard category. Therefore, the potential for erosion during construction is significantly decreased. However, prudent construction, erosion control measures, and best management practices will be used to avoid any potential short-term impacts. Grading and earthwork activities will comply with the requirements of the South Carolina Sediment, Erosion, and Storm Water Management Program.

3.5.3 Seismology

As described previously, this region is characterized by shallow earthquakes as opposed to deeper, stronger shocks experienced in other regions of the country. The last significant earthquake in the region occurred in 1886. However in recent years, the Coastal Plain area has been much less active. Therefore, there are no major concerns for the site as long as appropriate seismic parameters are considered in the final design.

3.6 Aesthetics

Construction of a power generating facility in a predominantly rural area will alter the visual character of the region. To mitigate visual effects, SCE&G has designed the facility using a 100-foot buffer along SSR 34. In addition, SCE&G is maintaining all of the Savannah River swamplands to the west of the site. Therefore, the remaining forest will help reduce visibility of the facility from the surrounding areas. The exception will be the emission stacks, which may be visible for some distance from the plant. However, the stacks will be silhouetted against the skyline, which lessons the visual impact. Furthermore, since there are no designated scenic or recreation areas nearby, the change in visual impact is not expected to be consequential.

3.7 Noise Quality

3.7.1 Noise Quality During Construction

Noise from construction activities associated with the project will be audible to nearby residents. However, construction noise would generally take place only during daylight hours and would be limited in duration. Based on construction noise analysis conducted for similar construction projects, noise levels of 60 dBA or above would occur sporadically over the construction period and would extend up to 1,200 feet from the facility.

3.7.2 Noise Quality During Operation

Sound associated with the facility operation will be produced by the gas turbine inlet, casing, and outlet; the side walls and exhaust of the heat recovery steam generator; the casing of the steam turbine generator; the mechanical draft wet cooling tower; the side walls and cooler fans of the main power and service transformers; the fuel gas metering and control systems, auxiliary motors, pumps, fans, compressors, and valves. Facility equipment will operate continuously and produce a steady sound 24-hours per day and seven days per week. The nearest noise sensitive areas are two residences. The closest, located just east of the proposed facility will be relocated. The other, will become the facility manager's residence.

3.8 Air Quality

3.8.1 Air Quality During Construction

Air pollution emissions during construction of the facility are expected to result from the operation of equipment and vehicles, which will generate dust. The effects of construction are expected to be of short duration and to be minor. Emissions estimates for construction activities are listed in Table 3-A and are based on EPA emissions factors for diesel powered heavy-duty construction equipment and a four-month construction period. These factors are for heavy construction operations on a five acre disturbed area with earth moving activities lasting two months.

The impact of construction on the environment would be localized and would persist only for the duration of construction activities. Fugitive dust emissions would be controlled as required by local or state regulations by using water sprays or other suppressants.

Table 3-A: Air Pollutant Emissions From Construction Activities in Tons

SOURCE	CO	HC	NO_X	PM
Heavy-duty construction equipment	1.54	0.44	5.76	0.33
Fugitive dust (heavy construction operations)	-	-	-	12.0
Totals	1.54	0.44	5.76	12.33

3.8.2 Air Quality During Operation

The primary sources of pollutant emissions at the Jasper County Generating Facility will be the natural gas-fired or distillate fuel oil-fired combustion turbines, including duct burners. Much smaller quantities of criteria pollutants are emitted from an emergency diesel generator, one multi-cell cooling tower and three distillate fuel oil storage tanks.

The Jasper County Generating Facility will release pollutants regulated by the EPA and SC DHEC into the atmosphere. The proposed project will be a major source of NO_x, CO, VOC, PM_{10}, SO_2 and H_2SO_4, and will have significant levels of Beryllium (see Table 3-B). These pollutants will, therefore, be subject to full PSD review. Emissions of Lead have a PTE (Potential to Emit) less than the significance threshold and no further review under PSD regulations is required. SCE&G has submitted a PSD application to the SC DHEC. The proposed energy facility will employ Best Achievable Control Technology (BACT) for NO_x, VOC, CO, SO_2, PM_{10}, H_2SO_4 and Beryllium to minimize air emissions. The facility will not be a major source of hazardous air pollutants.

3.8.3 Class I Area Impact Analysis

PSD regulations require that facilities within 100 km of a Federal Class I area perform a modeling evaluation of ambient air quality in terms of Class I PSD Increments and Air Quality Related Values (AQRVs). In addition, large projects between 100 and 200 km or more from a Class I area may be requested to conduct an evaluation of air quality impacts by the Federal Land Managers (FLMs). The proposed project location is within 200 km of three national wildlife refuges. The proposed facility is approximately 105 km from the Wolf Island National Wildlife Refuge, approximately 150 km from the nearest boundary of the Cape Romain National Wildlife Refuge, and approximately 170 km from the nearest boundary of the Okefenokee National Wildlife Refuge. Therefore, a PSD Class I impact analysis is required. Class I air dispersion modeling will be performed for the proposed project to determine the air quality impacts it may have on the three aforementioned Class I areas.

3.8.4 Vegetation and Soils

The project lies in an area of primarily agricultural use with surrounding swamp lands. No significant off-site impacts are expected from the proposed action. Therefore, the potential for adverse impacts to either soils or vegetation is minimal. Modeling was performed based on the facility's PTE to predict maximum ground level concentrations of SO_2, NO_x and CO. The results from the modeling indicated that no adverse impacts will occur to sensitive vegetation, crops or soil systems as a result of operation of the proposed facility.

3.8.5 Associated Growth

The Jasper County Generating Facility will employ approximately 800 personnel during the construction phase; but will employ approximately 25 personnel on a permanent basis. It is a goal of the project to hire from the local community where possible. There should be no substantial increase in community growth, or need for additional infrastructure. Therefore, it is not anticipated that the proposed action will result in an increase in secondary emissions associated with non-project related activities.

3.9 Waste Disposal and Fuel Handling

3.9.1 Solid Waste

The construction of the proposed Jasper County Generating Facility will produce various solid waste in the form of debris such as wood, sheet metal and concrete. SCE&G will properly dispose of all waste in accordance with applicable rules and regulations.

3.9.2 Domestic Waste

Domestic waste will be disposed of at a nearby wastewater treatment plant in accordance with applicable rules and regulations.

3.9.3 Fuel Handling

SCE&G will handle and store fuel in accordance with applicable rules and regulations. This includes developing a Spill Prevention, Containment and Counter Measure Plan (SPCC) for the facility.

Table 3-B: Hourly Criteria and PSD Pollutant Emissions Summary

Source Name	ESN	NO_x (1)	CO	VOC	SO_2	H_2SO_4 Mist	PM_{10}	Pb / Be
Hourly Emission Rates (lb/hr)								
Three (3) Combined-Cycle Combustion Turbines; Natural Gas	CTG-1 thru CTG-3	87.0	191.1	32.7	19.2	(4)	72.0 (2)	(3)
Three (3) Combined-Cycle Combustion Turbines; Fuel Oil	CTG-1 thru CTG-3	357.0	354.0	54.9	319.5	73.4	216.0 (2)	0.084 / 0.002
Emergency Diesel Generator	GEN-1	59.5	15.8	1.7	0.9	(5)	1.9	(3)
One (1) Cooling Tower	CT-1	(5)	(5)	(5)	(5)	(5)	0.04	(5)
Three (3) Distillate Fuel Oil Tanks	FO-1 thru FO-3	(5)	(5)	0.4	(5)	(5)	(5)	(5)

Notes:

Emission estimates for the turbines represent worst-case hourly emission rates over 50%, 75% and 100% load, and 20, 66 and 95 degrees.

(1) NO_x emissions from the combustion turbines are based on an exhaust gas concentration of 3.5 ppmvd @ 15% O_2 during natural gas operation, and 12 ppmvd @ 15% O_2 during distillate fuel oil operation.

(2) PM emissions include both filterable and condensable particulates.

(3) Negligible.

(4) For turbines in combined-cycle mode during natural gas operation, thermodynamic calculations have shown that sulfuric acid mist is not emitted when an SCR system is utilized. All SO3 is converted to ammonium sulfate. Ammonium sulfate emissions are included in the PM10 lb/hr total.

(5) Not applicable.

4.0 ENVIRONMENTAL EVALUATION PROGRAMS

4.1 Air Quality

SCE&G has submitted a Prevention of Significant Deterioration (PSD) air permit application as required by US EPA regulations. As a necessary part of the PSD program, the application will include components such as Best Achievable Control Technology (BACT) analysis, ambient air quality monitoring, Class I area modeling including coordination with Federal Land Managers, and the evaluation of impacts to visibility, soils, and vegetation. SCE&G will address the monitoring provisions required under 40 CFR 60 and 40 CFR Parts 72, 73, and 75.

4.2 Water Quality

SCE&G will comply with the Stormwater Management and Sediment Reduction Regulation related to water quality protection, and will comply with the recommendations of the agencies (e.g., preparation of an Erosion and Sediment Control Plan). The erosion control measures and Best Management Practices (BMP's) employed will be sufficient to prevent any sediment movement beyond construction limits during a 25-year storm event. Cooling water that is not evaporated will be discharged through a POTW facility. Thus, there will be no facility discharge to nearby surface waters and an NPDES waste water discharge permit will not be required for this project.

5.0 REFERENCES

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USDA (Soil Conservation Service). 1980. Soil Survey of Beaufort and Jasper Counties, South Carolina. Soil Conservation Service in cooperation with the South Carolina Agricultural Experiment Station and the South Carolina Land Resources Conservation Commission.

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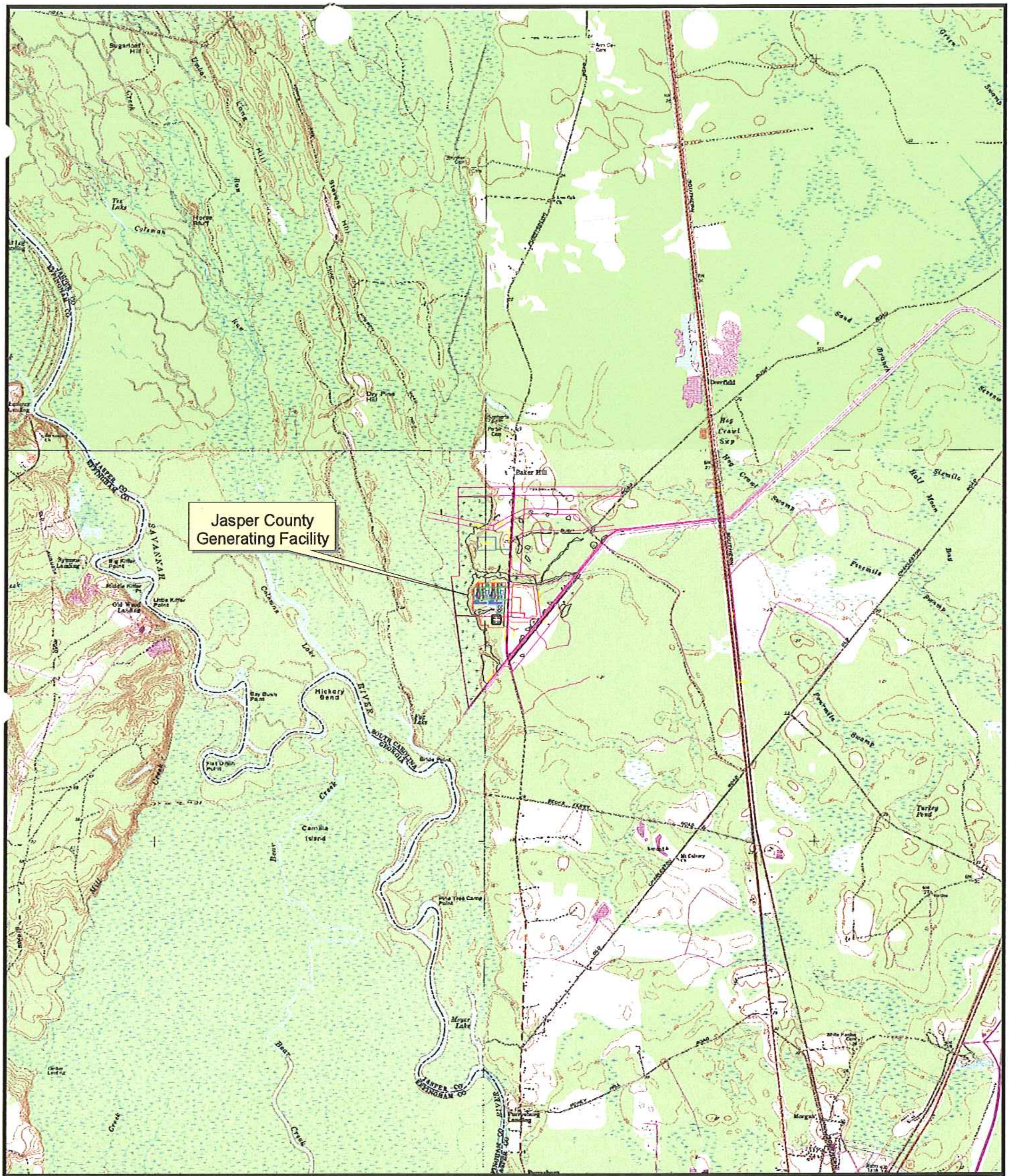
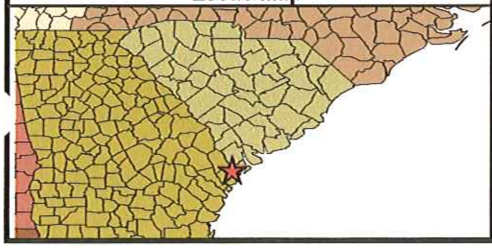
http://quickfacts.census.gov/qfd/states/45/45053.html. Demographic information for Jasper County.



Locus Map



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USGS QUADRANGLES:
Hardeeville, SC
Rincon, SC
Tillman, SC
Hardeeville NW, SC

Jasper County Generating Facility

Figure 1
REGIONAL TOPOGRAPHIC MAP

0 *2 Kilometers*

Date:
June 2001
Drawn by:
TOP
Project Number:
6147-018

ENSR INTERNATIONAL

PROOF OF SERVICE

This is to certify that I, Brian Beltman, have caused to be mailed on the 3rd day of October, 2001, one (1) copy of the Application to the South Carolina Public Service Commission by South Carolina Electric & Gas Company for a Certificate of Environmental Compatibility & Public Convenience & Necessity by placing a copy of same in the care and custody of the United States Postal Service, with proper first-class postage affixed thereto and addressed as follows:

C. Earl Hunter, Commissioner
S.C. Department of Health and
Environmental Control
2600 Bull Street
Columbia, SC 29201

Rodger E. Stroup, Director
S.C. Dept. Of Archives & History
8301 Parklane Road
Columbia, SC 29223

Dr. Paul Sandifer, Executive Director
S.C. Department of Natural Resources
PO Box 167
Columbia, SC 29202

Elizabeth S. Mabry, Executive Director
S.C. Dept. of Transportation
PO Box 387
Columbia, SC 29202

Dr. Bruce Rippeteau
Director and State Archaeologist
S.C. Inst. of Archaeology & Anthropology
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S.C. Dept. Parks, Recreation & Tourism
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Henry Moss, Administrator
County of Jasper
PO Box 1149
Ridgeland, SC 29936

Leroy Sneed, Chairman
Jasper County Council
PO Box 238
Ridgeland, SC 29936

Mayor Rodney Cannon
Town of Hardeeville
PO Box 987
Hardeeville, SC 29927

Mayor Ralph Tuten
Town of Ridgeland
PO Box 1119
Ridgeland, SC 29936

Brian W Beltman

SWORN to before me this
3RD day of October, 2001.

Notary Public for South Carolina

My Commission Expires: 9-13-11

PUBLIC NOTICE

South Carolina Electric & Gas Company is making Application to the South Carolina Public Service Commission on or about October 2, 2001, for a Certificate of Environmental Compatibility & Public Convenience & Necessity for the construction and operation of an 875 MW combined cycle electrical generating plant on a site located near Hardeeville, South Carolina. This Application is in accordance with the Code of Laws of South Carolina, 1976, Chapter 33, Title 58, as amended, entitled "Utility Facility Siting and Environmental Protection Act."

All parties may inspect maps, studies or other documents at South Carolina Electric & Gas Company's offices at 1426 Main Street, Columbia, South Carolina.

Any person wishing to comment on the Application or obtain additional information with regard thereto should contact in writing the South Carolina Public Service Commission, Post Office Box 11649, Columbia, South Carolina 29211, with a copy to Brian Beltman, South Carolina Electric and Gas Company, 8th Floor, Palmetto Center, 1426 Main Street, Columbia, South Carolina, 29218-0002.

LIST OF NEWSPAPERS IN WHICH PUBLIC NOTICE WILL BE PUBLISHED

The State, Columbia, South Carolina

The Hardeeville Times, Ridgeland, South Carolina

The Jasper County Sun, Ridgeland, South Carolina

The Beaufort Gazette, Beaufort, South Carolina

STATE OF SOUTH CAROLINA

VERIFICATION

COUNTY OF RICHLAND

PERSONALLY appeared before me Sarena D. Burch who on oath says that SOUTH CAROLINA ELECTRIC & GAS is a corporation and is the Applicant in the within matter; that he/she is Deputy General Counsel of said corporation and as such is authorized to make this verification on its behalf; that he/she knows the contents of the foregoing Application for a Certificate of Environmental Compatibility & Public Convenience & Necessity and that the same is true to the best of his/her knowledge, information and belief.

Sarena D Burch

Title: Deputy General Counsel

SWORN to before me this
28 day of Sept., 2001.

Linda V. Schiesser

Notary Public for South Carolina

My Commission Expires: 10-18-01